Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grade 5			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	WV	MA.5.M.O.5.4.7	Collect, record, estimate and calculate elapsed times from real-world situations (with and without technology).
Types of Engines (pgs. 11-23)	WV	MA.5.M.O.5.4.6	Estimate and/or measure the weight/mass of real objects in ounces, pounds, grams, and kilograms.
Chemistry (pgs. 25-41)	WV	MA.5.M.O.5.4.3	Develop strategies (i.e. finding number of same sized units of volume)to determine the volume of a rectangular prism; solve application problems involving estimating or measuring volume of rectangular prisms.
Physics and Math (pgs. 43-63)	WV	MA.5.M.O.5.1.6	Model and write equivalencies of fractions, decimals, percents, and ratios.
Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grade 6			
Activity/Lesson	**State**	**Standards**	
Chemistry (pgs. 25-41)	WV	MA.6.M.O.6.4.4	Develop strategies to determine volume of cylinders; solve real-world problems involving volume of cylinders, justify the results.
Physics and Math (pgs. 43-63)	WV	MA.6.M.O.6.2.4	Determine the rule, output or input; given an input/output model using one operation, write an algebraic expression for the rule and use to identify other input/output values.
Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Physics and Math (pgs. 43-63)	WV	MA.7.M.O.7.2.4	Analyze proportional relationships in real-world situations, select an appropriate method to determine the solution and justify reasoning for choice of method to solve.
Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grade 8			
Activity/Lesson	**State**	**Standards**	

History of Aviation Propulsion (pgs. 5-9)	WV	MA.8.M.O.8.2.10	Identify a real life problem involving change over time; make a hypothesis as to the outcome; develop, justify, and implement a method to collect, organize, and analyze data; generalize the results to make a conclusion; compare the hypothesis and the result of the investigation; present the problem using words, graphs, drawings, models, or tables.
Types of Engines (pgs. 11-23)	WV	MA.8.M.O.8.4.2	Solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models or definitions.
Chemistry (pgs. 25-41)	WV	MA.8.M.O.8.4.2	Solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models or definitions.
Physics and Math (pgs. 43-63)	WV	MA.8.M.O.8.2.5	Apply inductive and deductive reasoning to write a rule from data in an input/output table, analyze the table and the rule to determine if a functional relationship exists.
Physics and Math (pgs. 43-63)	WV	MA.8.M.O.8.2.7	Formulate and apply a rule to generate an arithmetic, geometric and algebraic pattern.
Physics and Math (pgs. 43-63)	WV	MA.8.M.O.8.4.2	Solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models or definitions.
Rocket Activity (pgs. 69-75)	WV	MA.8.M.O.8.4.2	Solve problems involving missing measurements in plane and solid geometric figures using formulas and drawings including irregular figures, models or definitions.
Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grades 9-12 (Algebra I)			
Activity/Lesson	**State**	**Standards**	
Types of Engines (pgs. 11-23)	WV	MA.9-12.M.O.A1.2.8	Identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).

Chemistry (pgs. 25-41)	WV	MA.9-12.M.O.A1.2.8	Identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).
Physics and Math (pgs. 43-63)	WV	MA.9-12.M.O.A1.2.5	Analyze a given set of data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns and make inferences and predictions based on observing the pattern.
Physics and Math (pgs. 43-63)	WV	MA.9-12.M.O.A1.2.8	Identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).
Rocket Activity (pgs. 69-75)	WV	MA.9-12.M.O.A1.2.8	Identify a real life situation that involves a constant rate of change; pose a question; make a hypothesis as to the answer; develop, justify, and implement a method to collect, organize, and analyze related data; extend the nature of collected, discrete data to that of a continuous linear function that describes the known data set; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project numerically, analytically, graphically and verbally using the predictive and analytic tools of algebra (with and without technology).
Pushing the Envelope			
2006 21st Century Mathematics			
Standards and Objectives			
West Virginia 21st Century Mathematics			
Grades 9-12 (Algebra II)			
Activity/Lesson	**State**	**Standards**	

Physics and Math (pgs. 43-63)	WV	MA.9-12.M.O.A2.2.7	Define a function and find its zeros; express the domain and range using interval notation; find the inverse of a function; find the value of a function for a given element in its domain; and perform basic operations on functions including composition of functions.